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The Impact of Video Self-Reflection on Teacher Practice

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THE IMPACT OF VIDEO SELF-REFECTION ON TEACHER PRACTICE

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Abstract

The purpose of this research study was to analyze the teacher's ability to utilize video self-reflection as a structured learning tool to enhance their teaching practice and CLASS scores. Research has demonstrated that teachers are better able to be self-reflective when provided with a framework (Calandra, Gurvitch, & Lund, 2008). Literature has documented video self-reflection and CLASS as links for growth in children and professional development support for teachers (Pianta, Mashburn, Downer, Hammer, & Justice, 2008). Results from the present study indicated that the teachers became increasingly aware of the CLASS Toddler tool criteria through scoring their own behaviors, which impacted their instructional practices with children and led to increase reliability in scoring and increased CLASS scores.

Chapter 1: Introduction

Justification

There is a growing body of literature linking teacher quality to positive outcomes for young children (Barnett, 2003; Whitebook, 1989; Whitebeook, 2003). Specifically, teachers' social behaviors can help shape children's dispositions toward learning (Flook, Goldberg, Pinger, & Davidson, 2015). Authoritative teachers who provide both high expectations for children and responsive interactions support children's exploration and development as curious and independent learners (Marion, 2011). Research suggests that teachers with increased education and experience are better able to support learners (Cowan & Goldhaber, 2015; DiCarlo, Baumgartner, Ota & Jenkins, 2015). As a field, the charge is to help teachers identify practices that support developmentally appropriate interactions with young children. Ideally, tools that allow teachers to assess their own interactions and behaviors can serve to keep teachers focused on the effects of their behaviors in the classroom. Self-reflection has been documented in the literature in the development of new behaviors and is the cornerstone of teacher quality initiatives (Brownell, Ross, Colon, & McCallum, 2005), such as the National Board for Professional Teaching Standards (http://www.nbpts.org/).

Self-Reflection

Self-reflection is an important process as it can lead to new ideas or perspectives (Fukkink & Tavecchio, 2010). The term *self-discovery* allows for personal insight into one's character, motivations, or needs. Value is placed on changed behaviors, where as an individual can be convinced which results to empowerment through self-discovery, allowing for changes to transpire. By implementing video self-reflection, teachers will benefit and feel the empowered

which can promote self-efficacy where the teachers do not feel like they are constantly under the thumb of their administrative team. When the teachers are empowered, their outlook and behavior modeling towards educating young children should shift to promoting more positive child outcomes per research.

Knowles, Holton, and Swanson (2005) created the *Andragogy in Practice* model to describe the principles of adult learning. They define adult learning "as the process of adults gaining knowledge and expertise" (Knowles, et al, p.157). Andragogy stipulates that there are six key principles that should be considered for the adult learner; the need to know, previous foundational knowledge, readiness, orientation to learning, motivation, and self-concept (2005). As adults continue through life, learning is intertwined and adult development occurs across multiple dimensions with learning experiences that need to be tailored to fit the different developmental stages of adults (Knowles, et al,). The learning experiences in a classroom need to be tailored to fit the students which is the reasoning behind rating instruments. Observations with high quality reliable and valid rating instruments can link classroom improvements to positive outcomes for teachers and students (Stuhlman, Hamre, Downer, & Pianta, 2015).

There are several tools that can be used to measure quality in an early childhood setting. The Infant Toddler Environmental Rating Scale (ITERS) and Early Childhood Environmental Rating Scales (ECERS) are used to evaluate the process quality of the environment (Harms, Clifford, & Cryer, 2015). These tools measure interactions of children-to-adults, child-to-child, materials in the environment, the environmental space and schedule of the day. These tools assess the quality of interactions between children and adults, children with materials, and interactions within the space. Although the research is clear that higher scores on these measures lead to positive outcomes for young children (McWilliam, de Kruif, & Zulli, 2002), these tools

focus more on the static (materials) and structural (scheduling) qualities of classrooms and do not provide as much detail on teacher practices (Harms, Clifford, & Cryer). In 2005, The National Center for Research in Early Childhood Education (NCRECE) with a group of researchers, developed the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2005). This tool provides a theoretically and empirically supported a framework developed to improve the quality of interactions between teacher and students in early childhood education settings. Concurrent to the development of the CLASS tool, the nation has placed enormous pressures on the education systems for accountability of quality early childhood programs to ensure promotion of stimulating and nurturing environments (Hamre, Goffin & Kraft-Sayre, 2009).

Purpose

The purpose of this research study was to analyze the teacher's ability to utilize video self-reflection as a structured learning tool to enhance their teaching practice and CLASS scores. Research has demonstrated that teachers are better able to be self-reflective when provided with a framework (Calandra, Gurvitch, & Lund, 2008). Literature has documented video self-reflection and CLASS as links for growth in children and professional development support for teachers (Pianta, Mashburn, Downer, Hammer, & Justice, 2008). The intervention in this study consisted of two tiers: Tier I, video self-reflection and Tier II, video feedback coaching. Teachers moved to the more intensive tier when sufficient changes to their behaviors were not observed.

The teachers completed an interview to help researchers identify an optimum time of day to conduct video recordings. All participating teachers previously received an overview of the CLASS tool and were required to view the practice videos on the CLASS website in preparation for the study. In Tier I, teachers scored a 15-minute video clip. As a measure of fidelity, a trained

reliable CLASS observer also scored the video. The expectation was that as teachers became increasingly aware of the CLASS criteria by scoring their own behaviors, their instructional practices with children would change and their CLASS scores would increase. If sufficient changes were not observed through the self-reflection only tier, the teacher moved into Tier II, video feedback coaching.

During Tier II, the reliability observer conducted coaching session via internet after the teacher completed the self-refection. The coaching session provided feedback within the teachers current video, using video voiceover (Screencastomatic). This fit within the Andragogy framework (Knowles, Holton, & Swanson, 2005), as teachers were shown opportunities within their current practices to use the suggested skills. Previous research suggests that analysis of teacher's own practices is effective for developing reflective abilities about practice, more so than other forms of training (Borko, Jacobs, Eiteljorg, & Pittman, 2008; Nagro, deBettencourt, Rosenberg, Carran & Weiss, 2016; Robinson & Kelley, 2007; Seidel, Sturmer, Blomberg, Kobarg, & Schwindt, 2011) allowing the teacher to view the video multiple times to observe her own interaction and hear the reliability observers' feedback.

Self-reflection is well documented in the literature (Durand, Hopf, & Nunnenmacher, 2015) as a valid mechanism for change. Self-reflection can be a catalyst for change in an organization.

Research Questions

Tier I questions:

1. Can teachers with general information (e.g., not trained to reliability) on the CLASS tool accurately assess their performance through video self-reflection? (teacher's score as compared to reliability observers score)

2. Will the use of self-reflection using the CLASS tool produce a change in teacher's observable behavior as evidenced by the CLASS tool?

Tier II questions:

1. Can teachers who have received video-feedback from a CLASS-reliable observer accurately assess their performance through video self-reflection? (teacher's score as compared to reliability observers score)
2. Will the use of video-feedback from a CLASS-reliable observer using the CLASS tool produce a change in teacher's observable behavior as evidenced by the CLASS tool?

Research Design

The purpose of the study was to determine if the use of guided self-reflection would improve teachers scores on CLASS. "The idea is that by seeing what practice should look like, teachers will be able to reflect, analyze, evaluate, develop, and improve their own skills." (Bayat, 2010, p. 162). This study utilized single subject research design to measure the effects of self-reflection on the teacher's CLASS scores. Specifically, a multiple baseline across subjects was used, which allowed for interventions to be created based on individual, initial baseline data. This type of study allows for small populations, with which the researchers are interested, in solving behavior problems on an individual basis (Kazdin, 2011). Data were collected during each phase for a minimum of 5 data points, as recommended in the What Works Clearinghouse: Single-Case Design Technical Documentation (Kratochwill, Hitchcok, Horner, Levin, Odeom, Rindskopf, & Shadish, 2010).

Benefits and Limitations

The benefits of a single subject study are that individual modifications can be made to allow for positive behavior interventions to be implemented (Kazdin, 2011) to allow for

successful implementation of the CLASS tool and video self-study. Another benefit is the low intensity support and cost factor as this will be a more economically effective professional development tool rather than having coaching on site to improve instructional practices(Kazdin). The limitations were the teacher's ability to utilize productive reflection. This study was limited to those teachers who needed immediate instructional support, scores in the sites performance profile, which was conducted by the states outside CLASS evaluator.

Assumptions

1. The quality of learning a student receives, is primarily a result of the quality of teaching. Therefore, reflective practice is important.
2. The CLASS tool can be used for self-reflective assessments and be effective for teachers who use self-reflection to guide their teaching practices.

Definitions

Reflective practice is the ability to consciously and thoughtfully examine using productive reflection with one's teaching practices, so as to learn and grow from the reflection (Zeichner & Liston, 1996).

Productive reflection is a learning technique to process, understand, and draw on different perspectives to improve upon a teachers practice and experiences (Cherrington & Loveridge, 2014).

Unproductive reflection lacks focus and value to their reflection of teaching practice (Cherrington & Loveridge, 2014).

Classroom Assessment Scoring System- CLASS

Emotional Support dimension receiving a high rating using the indicators positive climate,

teacher sensitivity and regard for student perspective. The teacher is warm and supportive to children and peers. The environment possesses motivation, comfort, acceptance of cognitive and social challenges while allowing autonomy.

Classroom Organization dimensions include behavior managements systems, positive productivity, and instructional learning formats.

Instructional Support dimensions includes concept development, quality of feedback, and language modeling. This area is the lowest scoring across the nation needing the most focus.

Chapter 2: Literature Review

Teacher quality has been associated in the literature with positive outcomes for young children (Barnett, 2003; Whitebook, 1989; 2003). The literature clearly shows one-shot workshops are not an effective mechanism for producing behavior change. The National Board of Professional Teaching Standards (NBPTS) incorporates the use of reflection to promote growth in teacher practices (National Board's ATLAS Boosts Teacher Prep in Louisiana through Video Analysis and Reflection, 2015). The NBPTS self-reflection works because teachers use established standards provided by NBPTS to reflect on their practice. NBPTS also requires candidates to use video and to reflect on video observations in consideration of these standards. This model fits well within the framework of Andragogy (Knowles, et al, 2005). The review of literature will address reflection, measures of teacher quality, and Adult Learning Theory. *Reflection* for this study refers to teaching as a holistic way of responding and meeting the needs of everyone in the environment. (Zeichner & Liston, 1996). Measures of teacher quality, which affect student-learning gains, are strong academic backgrounds, quality of preparation, teacher certification, and professional development. Well-designed professional development can improve practice resulting in increased student achievement (Darling-Hammond, 2010). Adult Learning Theory is based on Knowles research that the best learning environments utilize collaborative problem-based approaches to gain knowledge (Knowles, 1980, 1984).

Reflection

Reflective teachers examine teaching practice by asking why through self-observing and self-evaluate. *Reflection* is a term used to describe the process of thinking critically about your behavior (Zeichner & Liston, 1996). In the literature, *productive reflection* has been described as is a learning technique to process, understand, and draw on different perspectives to improve

upon a teachers practice and experiences (Cherrington & Loveridge, 2014; Bayat, 2010; Stürmer, Blomberg, Kobarg, & Schwindt, 2011). In a time of shrinking budgets (Levin, 2012) and increased accountability (Warlop, 2016), reflection can be used as a tool to help improve teacher skills (Roberts, 2016).

Reflection has been used to help teachers develop a more productive framework for best practice. In a study by Bayat (2010), subjects viewed videos of their teaching and reflected in a journal on their performance using the CLASS dimensions for their points of study. Video-recording was a powerful tool to promote critical analysis of teaching through productive reflection. *Productive reflection* is defined as a detailed analysis which leads to analytical higher order thinking. The subjects in this study noticed their weaknesses and were able to work on solutions to improve their teaching practices. The research concluded that video-recording was a powerful tool to promote critical analysis of teaching through this form of reflection. The teachers in this study noticed their problems and were able to work on solutions to improve their teaching practices. The article also implies that video recording could be used on an individual basis for supervision of teachers and also the children, setting, antecedents, behaviors, and consequence planning to support teachers and children (Bayat, 2010).

Different from Bayat, Cherrington and Loveridge (2014) found in their research that teachers rationalized rather than reflected. Cherrington and Loveridge discussed *productive reflection* as an individual's openness to different perspectives, ability to integrate new methods, ability to make connections to their improving practice, and ability to question assumptions. In contrast, *unproductive reflection* lacks focus or analysis of practice. This study examined early childhood teachers individually and as teams based on their reflection, thinking patterns, and pedagogical strategies. This study video recorded the teachers then the teachers discussed

collaboratively, reviewed, rationalized, and reflected on their practices. "These findings suggest that video and collective dialogue are useful professional learning tools for teachers to examine and improve their teaching, structural and relational challenges exist that may impact on how effectively such tools are used." (Cherrington & Loveridge, 2014, p. 1).

In research conducted by Fukkink and Tavecchio (2010), the findings were similar to those of Bayat in that the study showed results "boosts self-efficacy and leads to the behavior being displayed more frequently" (p. 47). This research study incorporated video feedback from a researcher that was designed to promote the subject's professional skills. "By seeing themselves on video, professionals are able to improve their receptive, informative and relational skills." (Fukkink & Tavecchio, 2010, p. 56). Researchers found that the feedback needed to be specific, as it helped pinpoint the key elements that needed to be worked on for evaluation of performance.

Lamkin's (2015) research analyzed the process of teacher's videotaping for self-reflection of teaching practices to improve their instruction in the classroom. One goal of this research was to provide teachers with opportunities to gain individualized professional learning by viewing their own practice instead of being told what someone saw. This research was supported by previous research studies supporting the notion that engaging in reflection assists teachers to make the necessary changes for improvement of instructional practice (Seidel, Stürmer, Blomberg, Kobarg, & Schwindt, 2011). Four of the six people in this study agreed that using video allowed them to generate feedback that was immediate and honest rather than interpreting feedback given by another person. The subjects found "video to be a valuable tool in professional development efforts, despite the discomfort it initially caused." (Lamkin, p.115). The subjects were able to see themselves in different perspectives that "would not have been as

meaningful had it come in the form of feedback from another individual" (Lamkin, p.121).

Measures of Teacher Quality

Strong, Ward, Tucker and Hindman (2007) conducted research on the relationship between teacher quality and student achievement that found teacher's instructional practices and behaviors resulted in higher student learning gains. The increased teacher quality has been tied to positive outcomes for young children in the professional literature (Darling-Hammond, 2000). There is a push to evaluate teacher's skills to ensure that they are providing evidence-based instruction. One measure of teacher quality that is widely used is the *Classroom Assessment Scoring System* (CLASS; Pianta, La Paro, & Hamre, 2008). The CLASS measures the quality of the classroom interactions and instructional processes. CLASS is organized into three domains to assess the interactions among children and teachers that promote children's social and academic development: Emotional Support, Classroom Organization, and Instructional Support.

Recognizing the need for accessible support, Pianta, Mashburn, Downer, Hamre, & Justice (2008) conducted research utilizing the CLASS tool component My Teaching Partner. My Teaching Partner is a coaching process for professional development that provides support for effective child-teacher interactions through a process using videos. Their process is broken down into two areas: observation and opportunities. The *observations* portion allows teachers to view effective language, instructional and social interactions between children and teachers. The *opportunities* component references the individual feedback to enhance personal teacher practices and interactions within the components of the CLASS instrument. The professional development included a consultation and allowed access to CLASS high quality videos. Every two weeks' teachers video tape their own implementations of the curriculum and shared with a

consultant. The results showed that teachers who received coaching had more growth than teachers who only had access to web based materials without coaching.

1n 2016, Early, Maxwell, Ponder, & Pan conducted research using My Teaching Partner, one-to-one remote coaching, an aspect of the CLASS instrument. In this research study the teachers sent videos of their teaching to a coach, who provided feedback in relation to the domains of the CLASS tool. Feedback from the coach was followed by a conference call to further discuss. Out of the 10 cycles, 56% of the teachers completed 8 more cycles. This study was conducted with a wide range of teachers which created a concluding question "are there ways to identify which teachers are likely to benefit most from one-on one, intensive support provided by MTP?" (Early, Maxwell, Ponder, & Pan, 2016, p. 69).

The CLASS tool has been used as a framework for teacher development in several studies (Early, Maxwell, Ponder, & Pan, 2016; Pianta, et al., 2008) Research suggests that coaching from an expert practitioner produced gains in teacher behavior in comparison to teachers who were not provided with coaching (Pianta, et al., 2008).

Adult Learning Theory

Adult learning theory, also known as *andragogy*, is the art and science of adult learning (Knowles, 1984). There are five assumptions about adult learners that differ from child learners (Knowles 1980; 1984): a) self-concept – adults view themselves as self-directed; b) adult learner experience - adults come with prior experience they draw from when learning new information; c) readiness to learn – learning is oriented to task in alignment with the individual's role; d) orientation to learning – adults are problem-centered; e) motivation to learn – adult motivation is internal. The assumptions for the adult learner differ from that of the child learner; therefore, those teaching adults must adjust their orientation. Knowles suggested four principles that should

be addressed when planning instruction for adults: a) adults should be involved in the planning and evaluation of their instruction; b) the recognition that experience provides the basis for learning; c) adults are interested in topics that have immediate relevance to their job; d) adult learning is problem-centered, rather than adult-oriented (Kearsley, 2010).

Using the andragogy principles to the design of teaching educators, trainings should focus on involvement of the participants based on personal training requirements and situational characteristics (level of experience). To accommodate participants, surveys prior to trainings for topics of interest which empowers the participants, facilitating a take away that will more likely be implemented into their professional practice.

Empowerment of teachers to be self-directing, Knowles, Holton and Swanson (2005) describes the need and ability for adults to be self-directing for the prevention of tension and rebellion in the workforce and life. The authors discuss the understanding and application of the andragogical models components, which if implemented for the promotion of self-direction in adult learners, should produce a transformation. In 2013 Chad Harnisch, a high school principal in Wisconsin (Knight, 2014) wanted to make his conversations following teacher observations more meaningful. Harnisch found the video allowed for "a more professionally rich conversation". Knight suggested six guidelines for successful empowerment of video programs: a.) ensure psychologically safe environments; b) make participation a choice; c) focus on intrinsic motivation; d) establish boundaries; e) walk the talk; and f) go slow to go fast.

Summary

Teacher quality is of growing concern in the field of early childhood education. The field is turning to more teacher-directed forms of professional development, such as reflection. There is recognition that reflection works best when it is guided by a framework that individuals can

use to compare their teaching practices, supported by peer discussion on expert coaching. This process is in alignment with adult learning theory, which states that adults need to be involved in the process of evaluation (reflection), consider experience (provide feedback only as needed), address topics that are relevant to their immediate situation (reflecting on their own teaching performance) and use a problem-centered approach (focus of feedback is on established area of need).

Chapter 3: Method

The purpose of this research study was to analyze the teacher's ability to utilize video self-reflection as a structured learning tool to enhance their teaching practice as demonstrated by their performance on the *Classroom Assessment Scoring System* (CLASS; Pianta, La Paro, & Hamre, 2005). Research suggests that teachers are better able to be self-reflective when provided with a framework (Calandra, Gurvitch, & Lund, 2008). Literature has documented video-self-reflection and CLASS as links for growth in children and professional development support for teachers. (Pianta, Mashburn, Downer, Hammer, & Justice, 2008). The model for the present study began by engaging teachers in a self-reflection process, through their scoring videotapes of their teaching using the CLASS tool (Tier I), then moving to an increased level of support using video feedback from a CLASS reliable assessor.

Setting

The study was conducted at a campus-based child care center that serves children from birth to Pre-K. The program is accredited by the National Association for the Education of Young Children (NAEYC, 1991) adheres to criteria set forth in the Infant/Toddler Environmental Rating Scale (ITERS, 2017) and the Early Childhood Environmental Rating Scale (ECERS, 2015), and follows a Reggio Emilia-inspired philosophy in the education and development of young children. The Reggio Emilia approach is based on certain fundamental values about how children naturally learn(Edwards, Gandini, & Forman (2012). In this approach children co-construct their knowledge through interactions with other people and the surrounding environment, which is an essential element of CLASS. The CLASS instrument evaluates interactions between teacher-child, rating the emotional climate and critical thinking of the interactions to improve learning and development.

Participants

Inclusion criteria for the present study was based on the scores from the high stake via state mandated CLASS external evaluation observation. These state-mandated external observations had been implemented in the state for the past three years ago for all childcare and preschool settings. For this study, the states observations, which were conducted during the fall semester of the previous school year were reviewed. The teachers chosen were in the most need for professional development according to their CLASS scores from the external observations. Five female teachers were eligible for participation in this study. Teacher One was African American, earned a Bachelors of Science in Family and Consumer Sciences, and had 13 years of experience. She was currently teaching toddlers (ages 2-3 years); Teacher Two was African American, earned a Bachelors of Science in Family and Consumer Science, and had 7 years of experience. She was currently teaching young toddlers (ages 1-2 years); Teacher Three was African American, and earned an Associate of Applied Science in Early Childhood Education, and had 6 years of experience. She taught toddlers (ages 2-3 years); Teacher Four was African American, and earned a Bachelors of Science in Family Consumer Sciences, and had 7 years of experience. She taught young preschool (ages 2.5 -4 years); and Teacher Five was Caucasian, and earned a Bachelors of Science in Early Childhood Education with teaching certification in PK-3, and had 4 years of experience. She taught, preschool (ages 4-5 years). Exclusion criteria were teachers whose scores were high enough to produce a ceiling effect. Due to attendance and attrition, teachers four and five were eliminated from the study. This study received approval from the university's Institutional Review Board and informed consent was obtained from participating teachers (see Appendix A)

Instrumentation

The *Classroom Assessment Scoring System* (CLASS; Pianta, La Paro, & Hamre, 2005) was used to measure teacher's classroom behavior. The CLASS tool consists of three broad Domains *Social/Emotional Support, Management/Organizational Support,* and *Instructional Support*. The Domains are broken into indicators called *Dimensions.* The toddler CLASS tool consists of eight dimensions: *Positive Climate, Negative Climate, Teacher Sensitivity, Regard for Student Perspective, Quality of Feedback, Language Modeling, Behavior Guidance, and Facilitation of Learning and Development* (Hamre, Goffin, & Kraft-Sayre, 2009). The CLASS tools rating scale consists of a Likert-type scale (1-7) with 1-2 representing *low* quality teacher-child interaction, 3-5 is a *mid-range* representing a mixture of effective interactions, and 6-7 represents *high* teacher-child interactions which are consistently observed throughout the observation.

The Social and Emotional Support Domain includes the interactions between the people in the classroom, positively or negatively. Teachers who score high in this area are responsive, and acknowledge children's feelings. *Teacher sensitivity* includes awareness, anticipation, and support of children's individual needs in the environment. This incorporates *Regard for Student Perspective* by valuing and empowering the students to make decisions and assume leadership roles in the classroom, while engaging in meaningful interactions.

The Organizational and Management Supports Domain includes classroom routines, behavior management, productivity, and instructional learning and development format. Within this domain the students are aware of the daily schedule, engaged in well-designed centers, and have flexibility to explore, while the teacher's implement appropriate guidance strategies.

The Instructional Support Domain includes concept development, language modeling and quality of feedback. This domain assesses teacher questioning, implementation of concepts to promote cognitive and language development. This domain measures the teachers' ability to extend children's conversational skills, problem solving, and thinking processes while connecting concepts to real world experiences.

By utilizing video recordings for self-reflection, teachers were able to view and assess their own teacher-child interactions across CLASS's multiple dimensions allowing for more effective reflection, learning, teaching and increased self-efficacy. This research study allowed teachers to progress towards their goals within a framework to achieve higher levels of appropriate behavior interactions within their classrooms (Stuhlman, et, al, 2015).

Observation Procedure

The researcher was trained to reliability on the CLASS Toddler tool. Participating teachers were interviewed to determine their perspective of the most stressful periods of their instructional day. Prior to the beginning of the study, teachers participated in an overview of the CLASS tool training, and were asked to review the CLASS tool and videos in the CLASS online library. Throughout the study, 15-minute video recordings of classrooms were collected for teachers to use as a mechanism for self-reflection on their teaching practice through the scoring of the video using the CLASS manual. Teachers were asked in each condition to score videos of themselves, making note of evidence to support their numeric scores. The researcher also scored the videos, compiling evidence to support scoring.

Experimental Conditions

Tier I. During Tier I, teachers were asked to score video of their teaching using the CLASS tool. Reliability of teacher data was calculated by comparing to the researcher's scoring.

In order to determine the utility of this approach, data were collected on a weekly basis over several months. Data were plotted for visual analysis to determine the effects of Tier I, teacher self-reflection, while also tracking reliability of teacher collected data with the researcher.

The expectation was that as teachers became increasingly aware of the CLASS criteria by scoring their own behaviors, their instructional practices with children would change and their CLASS scores would increase. If sufficient changes were not observed through the self-reflection only phase, the teacher would move into Tier II, video coaching.

Tier II. During Tier II, the researcher shared a voice over video from the teacher's sessions, after they self-scored, to assist in the teachers understanding of the CLASS criteria and opportunities to use the recommended criteria. This fits within the Andragogy framework (Knowles, 1984), as teachers were shown opportunities within their current practices to use the suggested skills. The voice-over coaching was created using Screencastomatic, a software tool for recording screenshots allowing visual and verbal cues to be given for areas of strengths and areas for improvement. This allowed the teacher to view the video multiple times to observe her own interaction and hear the reliability observers' feedback. Data was plotted for visual analysis to determine the effects of Tier II, video voice over coaching, while also tracking reliability of teacher collected data with the researcher.

Data Analysis

Data from this study were analyzed using visual analysis(Kazdin, 2011), using the researchers' scores as the unit of analysis to determine if teachers were able to increase their CLASS scores through the use of self-reflection (during Tier I or Tier II). Reliability of the teacher's self-reflections were calculated in comparison to the researcher's scores to determine if teacher's accuracy in scoring the CLASS tool increase across the duration of the study

Questions

The research questions guiding the study:

Tier I questions:

1. Can teachers with general information (e.g., not trained to reliability) on the CLASS tool accurately assess their performance through video self-reflection? (teacher's score as compared to reliability observers score)
2. Will the use of self-reflection using the CLASS tool produce a change in teacher's observable behavior as evidenced by the CLASS tool?

Tier II questions:

3. Can teachers who have received video-feedback from a CLASS-reliable observer accurately assess their performance through video self-reflection? (teacher's score as compared to reliability observers score)
4. Will the use of video-feedback from a CLASS-reliable observer using the CLASS tool produce a change in teacher's observable behavior as evidenced by the CLASS tool?

Experimental Design

A single subject research design was used to measure changes in teacher behavior as measured by the CLASS tool. Specifically, a multiple baseline designs was used to measure the impact of the intervention (Tier I or Tier II) across teachers, which was practical in this study as more than one teacher required interventions. Experimental control was demonstrated through repeated introduction of each Tier across teachers at different points in time (Kazdin, 2011). Single subject research is useful in a clinical setting when attempting to change or modify specific behaviors in an individual, as it allows for comparison of an individual's behavior across different conditions (e.g., Tiers of intervention). (Cooper, Heron & Heward, 2007).

Limitations

The implementation can be time consuming and interventions may alter some behaviors but not others. This study was initiated with five teachers and subject drop out from the study resulted in limited data.

Inter-observer Agreement

Twenty-two percent of all observations (n=36) were dually coded by the researcher and an additional CLASS -certified reliability trainer. Within one-point reliability was used to calculate the percent agreement per dimension across all observation sessions (Cassidy, Hestenes, Hegde, Hestenes, & Mims, 2005). Overall reliability was 93% (range, 85-100%). Reliability data per Dimension were as follows: *Positive Climate* reliability 100% (range, 100%); *Negative Climate* reliability 100% (range, 100%); *Teacher Sensitivity* reliability 91% (range, 60-100%); *Regard for Child Perspective* reliability 100% (range, 100%); *Behavior Guidance* reliability 91% (range, 60-100%); *Facilitation of Learning* reliability 95% (range, 60-100%); *Quality of Feedback* reliability 85% (50-100%); *Language Modeling* reliability 85% (range, 60-100%).

Chapter 4: Results

The present study sought to determine if video self-reflection could impact teacher practices in the early childhood classroom. Two separate interventions were applied to determine their effect on teacher behavior. Guiding research questions specifically sought to determine if 1.) the use of Tier I (self-reflection using the CLASS tool) or Tier II (video-feedback from CLASS-reliable observer) produced a change in teacher's ability to accurately assess their performance; and 2.) the use of Tier I (self-reflection using the CLASS tool) or Tier II (video-feedback from CLASS-reliable observer) produced a change in teacher's observable behavior as evidenced by the CLASS tool.

Research Question 1: Reliability

Research question 1 sought to determine if teachers could accurately assess their own performance during each Tier of the study. Tables 4.1-4.4 summarize the reliability of the teachers' CLASS scores as compared to the researcher across the 8 dimensions and 2 domains of the CLASS Toddler tool for both Tier I (Tables 4.1 & 4.2) and Tier II (Tables 4.3 & 4.4). For each dimension, reliability was calculated between the teacher and the researcher using the formula of dividing the smaller raw score by the larger raw score to generate percentage. Within each Tier, the teachers' reliability score for the first data point was compared to reliability for the last data point to determine each teacher's percentage point increase or decrease during that tier. Domain scores were calculated by averaging the dimension percentages for the first and last data point across all dimensions in that domain to determine each teacher's overall percentage point increase or decrease during that tier.

Tier I - Tammy. In Tier I, Tammy was 100% reliable scoring the CLASS tool as compared to the researcher within the Dimensions of *Positive Climate, Negative Climate, Regard for Child Perspective, Facilitation of Learning,* and *Quality of Feedback.* In the Dimension of *Teacher Sensitivity* Tammy's baseline reliability was 67% and increased at the end of Tier I to 100% which demonstrates an increase of 33 percentage points. In the Dimension of *Language Modeling* Tammy's baseline reliability was 50% and increased at the end of Tier I to 100% which demonstrates an increase of 50 percentage points. Domain 1: *Emotional and Behavioral Support* resulted in an overall increase of 7 percentage points (Table 4.1)

Table 4.1. Domain I Table 1 reliability of teachers CLASS scores as compared to the researcher

Tier 1	Dimension-Positive			Dimension-Negative			Dimension-Teacher sensitivity			Dimension-Regard for Child			Dimension-Behavior Guidance			Domain 1-Emotional and Behavioral Support		
	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ
Tammy	100	100	0	100	100	0	67	100	+33	100	100	0	100	100	0	93	100	+7
Valerie	100	67	-33	100	100	0	100	60	-40	100	50	-50	100	60	-40	100	67	-33
Danielle	100	100	0	100	100	0	100	67	-33	100	67	-33	67	100	+33	93	87	-6

Note. Δ=difference

and Domain 2: Engaged Support for Learning: *Engaged Support for Learning* resulted in an overall increase of 17 percentage points (Table 4.2).

In Tier I Domain 1 and Domain 2 Tammy was reliable scoring the CLASS tool as compared to the researcher.

Table 4.2. Domain 1 Table 2 reliability of teachers CLASS scores as compared to the researcher

Tier 1	Dimension- Facilitate			Dimension- Quality of feedback			Dimension- Language Modeling			Domain 2- Engaged Support for Learning		
	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ
Tammy	100	100	0	100	100	0	50	100	+50	83	100	+17
Valerie	80	50	-30	100	75	-25	100	60	-40	93	70	-23
Danielle	100	100	0	100	100	0	100	100	0	100	100	0

Note. Δ=difference

Tier I - Valerie. In Tier I, Valerie was 100% reliable scoring the CLASS tool as compared to the researcher within the Dimension of *Negative Climate*. In the Dimension of *Positive Climate*, the baseline reliability was 100% and decreased at the end of the Tier to 67% which demonstrates a decrease of 33 percentage points. In the Dimension of *Teacher Sensitivity* Valerie's baseline reliability was 100% and decreased at the end of Tier I to 60% which demonstrates a decrease of 40 percentage points. In the Dimension of *Regard for Child Perspective* Tammy's baseline reliability was 100% and decreased at the end of Tier I to 50% which demonstrates a decrease of 50 percentage points. In the Dimension of *Behavior Guidance* Valerie's baseline reliability was 100% and decreased at the end of Tier I to 60% which demonstrates a decrease of 40 percentage points. In the Dimension of *Facilitation of Learning* Valerie's baseline reliability was 80% and decreased at the end of Tier I to 50% which demonstrates a decrease of 30 percentage points. In the Dimension of *Quality of Feedback* Valerie's baseline reliability was 100% and decreased at the end of Tier I to 75% which

demonstrates a decrease of 25 percentage points. In the Dimension of *Language Modeling* Valarie's baseline reliability was 100% and decreased at the end of Tier I to 60% which demonstrates a decrease of 40 percentage points. Domain 1: *Emotional and Behavioral Support* resulted in an overall decrease of 33 percentage points (Table 4.1) and Domain 2: Engaged Support for Learning: *Engaged Support for Learning* resulted in an overall decrease of 23 percentage points (Table 4.2).

Tier I - Danielle. In Tier I, Danielle was 100% reliable scoring the CLASS tool as compared to the researcher within the Dimensions of *Positive Climate, Negative Climate, Facilitation of Learning, Quality of Feedback,* and *Language Modeling*. In the Dimension of *Teacher Sensitivity* Danielle's baseline reliability was 100% and decreased at the end of Tier I to 67% which demonstrates a decrease of 33 percentage points. In the Dimension of *Regard for Child Perspective* Danielle's baseline reliability was 100% and decreased at the end of Tier I to 67% which demonstrates a decrease of 33 percentage points. In the Dimension of *Behavior Guidance* Danielle's baseline reliability was 67% and increased at the end of Tier I to 100% which demonstrates an increase of 33 percentage points. Domain 1: *Emotional and Behavioral Support* resulted in an overall decrease of 6 percentage points (Table 4.1) and Domain 2: Engaged Support for Learning: *Engaged Support for Learning* remained constant with 100% reliability (Table 4.2). In Tier I Domain 1 and Domain 2 Danielle was reliable scoring the CLASS tool as compared to the researcher.

Tier II – Tammy. In Tier II, Tammy was 100% reliable scoring the CLASS tool as compared to the researcher within the Dimensions of *Positive Climate, Negative Climate, Teacher Sensitivity, Behavior Guidance, Facilitation of Learning, Quality of Feedback* and *Language Modeling*. In the Dimension of *Regard for Child Perspective* Tammy's baseline

reliability was 100% and decreased at the end of Tier II to 71% which demonstrates a decrease of 29 percentage points. Domain 1: *Emotional and Behavioral Support* resulted in an overall decrease of 6 percentage points (Table 4.3) and Domain 2: *Engaged Support for Learning* remained constant with 100% reliability (Table 4.4). In Tier II Domain 1 and Domain 2 Tammy was reliable scoring the CLASS tool as compared to the researcher.

Table 4.3. Domain 1 Tier II reliability of teachers CLASS scores as compared to the researcher

Tier II	Dimension-Positive			Dimension-Negative			Dimension-Teacher sensitivity			Dimension-Regard for Child			Dimension-Behavior Guidance			Domain 1-Emotional and Behavioral Support		
	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ
Tammy	100	100	0	100	100	0	100	100	0	100	71	-29	100	100	0	100	94	-6
Valerie	67	71	+4	100	100	0	100	100	0	67	71	+4	100	100	0	87	88	+1
Danielle	100	100	0	100	100	0	100	100	0	67	71	+4	100	67	-33	93	88	-5

Note. Δ=difference

Table 4.4. Domain 2 Tier II reliability of teachers CLASS scores as compared to the researcher

Tier II	Dimension-Facilitate			Dimension-Quality of feedback			Dimension-Language Modeling			Domain 2-Engaged Support for Learning		
	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ	1st	Last	Δ
Tammy	100	100	0	100	100	0	100	100	0	100	100	0
Valerie	100	100	0	100	60	-40	100	100	0	100	87	-13
Danielle	100	67	-33	100	100	0	100	100	0	100	89	-11

Note. Δ=difference

Tier II – Valerie. In Tier II, Valerie was 100% reliable scoring the CLASS tool as compared to the researcher within the Dimensions of *Negative Climate, Teacher Sensitivity, Behavior Guidance, Facilitation of Learning,* and *Language Modeling*. In the Dimension of *Positive Climate* Valerie's baseline reliability was 67% and increased at the end of Tier II to 71% which demonstrates an increase of 4 percentage points. In the Dimension of *Regard for Child Perspective* Valerie's baseline reliability was 67% and increased at the end of Tier II to 71% which demonstrates an increase of 4 percentage points. In the Dimension of *Quality of Feedback* Valerie's baseline reliability was 100% and decreased at the end of Tier II to 60% which demonstrates a decrease of 40 percentage points. Domain 1: *Emotional and Behavioral Support* resulted in an overall increase of 1 percentage point (Table 4.3) and Domain 2: *Engaged Support for Learning* resulted in an overall decrease of 13 percentage points (Table 4.4). In Tier II Domain 1 and Domain 2 Valerie was reliable scoring the CLASS tool as compared to the researcher.

Tier II- Danielle. In Tier II, Teacher 3, Danielle was 100% reliable scoring the CLASS tool as compared to the researcher within the Dimensions of *Positive Climate, Negative Climate, Teacher Sensitivity, Quality of Feedback* and *Language Modeling*. In the Dimension of *Regard for Child Perspective* Danielle's baseline reliability was 67% and increased at the end of Tier II to 71% which demonstrates an increase of 4 percentage points. In the Dimension of *Behavior Guidance* Danielle's baseline reliability was 100% and decreased at the end of Tier II to 67% which demonstrates a decrease of 33 percentage points. In the Dimension of *Facilitation of Learning* Danielle's baseline reliability was 100% and decreased at the end of Tier II to 67% which demonstrates a decrease of 33 percentage points. Domain 1: *Emotional and Behavioral Support* resulted in an overall decrease of 5 percentage points (Table 4.3) and Domain 2:

Engaged Support for Learning resulted in an overall decrease of 11 percentage points (Table 4.4). In Tier II Domain 1 and Domain 2 Danielle was reliable scoring the CLASS tool as compared to the researcher.

Research Question 2: Change in CLASS Scores

Research question 2 sought to determine if teachers could increase their CLASS score during each Tier of the study. Figures 1-6 summarize teachers' CLASS scores as measured by the researcher across each dimension of the CLASS Toddler tool, with the exception of the Dimensions of *Positive Climate* and *Negative Climate*, as the three teachers consistently scores in the high range.

Positive & Negative Climate. Tier I, Tammy had an overall average mean of 6 for positive climate and 1 for negative climate. Tier II, Tammy had an overall average mean of 7 for positive climate and 1 for negative climate. Tier I, Valerie had an overall mean of 6 for positive climate and 1 for negative climate. Tier II, Valerie had an overall average mean of 7 for positive climate and 1 for negative climate. Tier I, Danielle had an overall mean of 6 for positive climate and 1 for negative climate. Tier II, Danielle had an overall average mean of 6 for positive climate and 1 for negative climate.

Teacher Sensitivity. Figure 1 depicts teacher's CLASS scores within the dimension of *Teacher Sensitivity* across Tier I and Tier II. In Tier I, Tammy's average CLASS score was 5 (range, 4 – 5); when Tier II intervention was applied Tammy's average CLASS score increased to 6 (range 6 – 7), This represents a 1-point increase. In Tier I, Valerie's average CLASS scores was 5 (range, 5 – 6); when Tier II intervention was applied Valerie's average CLASS score increased 6 (range, 5 – 7). This represents a 1-point increase. In Tier I Danielle's average

CLASS score was 5 (range, 5 – 6); when Tier II intervention was applied Danielle's average CLASS score increased to 6 (range, 6 – 7). This represents a 1-point increase.

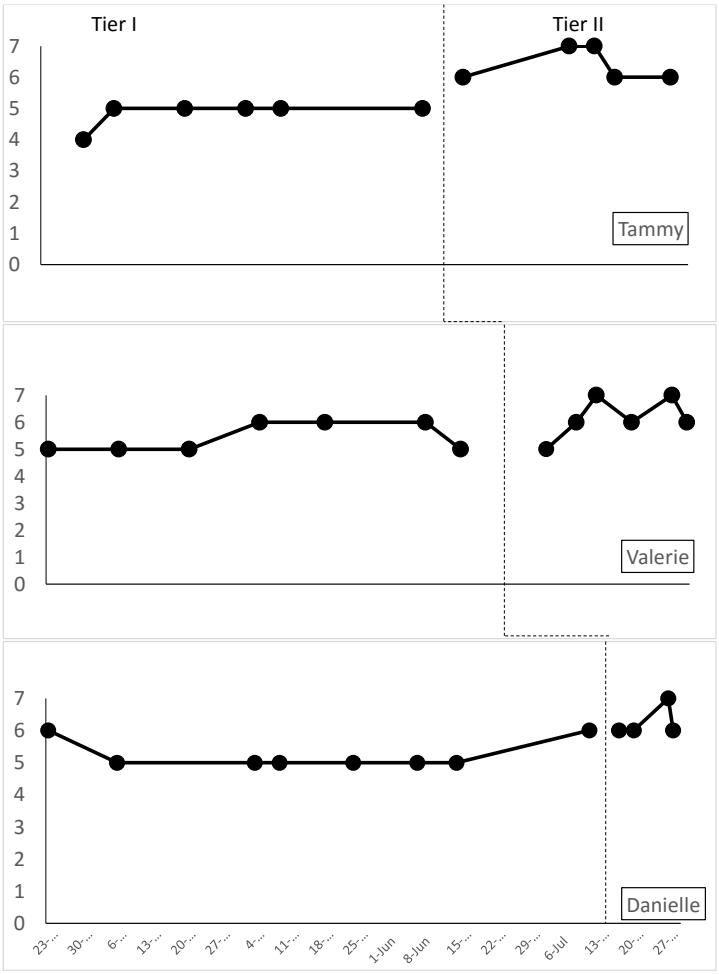

Figure 1. *Teacher Sensitivity* across Teacher 1, Teacher 2, and Teacher 3 during Tier I and Tier II.

Regard for Child Perspective. Figure 2 depicts teacher's CLASS scores within the dimension of *Regard for Child Perspective* across Tier I and Tier II. In Tier I Tammy's average CLASS score was 5 (range, 4 – 6); when Tier II intervention was applied Tammy's average CLASS score increased to 7 (range , 6 – 7);, which demonstrates a 2-point increase.. In Tier I Valerie's CLASS score was 5 (range,, 4 – 6); , when Tier II intervention was applied Valerie's

average CLASS score increased to 6 (range, 5 – 7). This represents a 1-point increase. In Tier I Danielle's CLASS score averaged 5 (range, 4 – 6); when Tier II intervention was applied Danielle's average CLASS score increased to 7 (range, 6-7). This represents a 2-point increase.

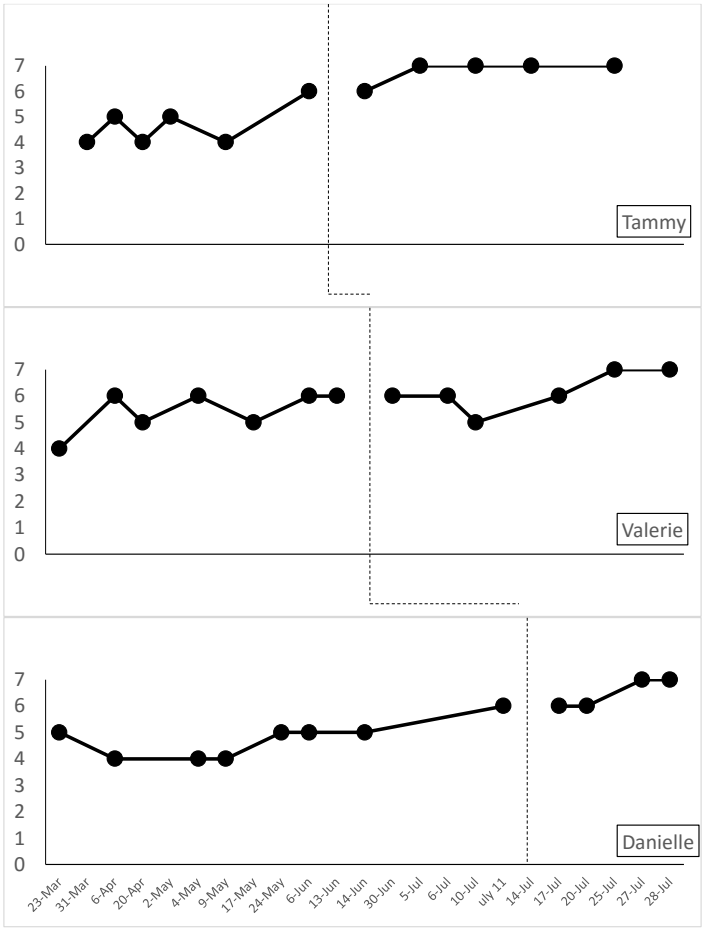

Figure 2: *Regard for Child Perspective* across Teacher 1, Teacher 2, and Teacher 3 during Tier I and Tier II.

Behavior Guidance. Figure 3 depicts teacher's CLASS scores within the dimension of *Behavior Guidance* across Tier I and Tier II. In Tier I Tammy's average CLASS score was 5 (range, 4 – 6); when Tier II intervention was applied Tammy's average CLASS score increased to 6 (range 6-7). This represents a 1-point increase. In Tier I Valerie's average CLASS score

was 5 (range, 4 – 6); , when Tier II intervention was applied Valerie's average CLASS score increased to 6 (range, 5 – 6). This represents a 1-point increase. In Tier I Danielle's average CLASS score was 6 (range, 4 – 6); when Tier II intervention was applied Danielle's average CLASS score increased to 7 (range, 6 – 7). This represents a 1-point increase.

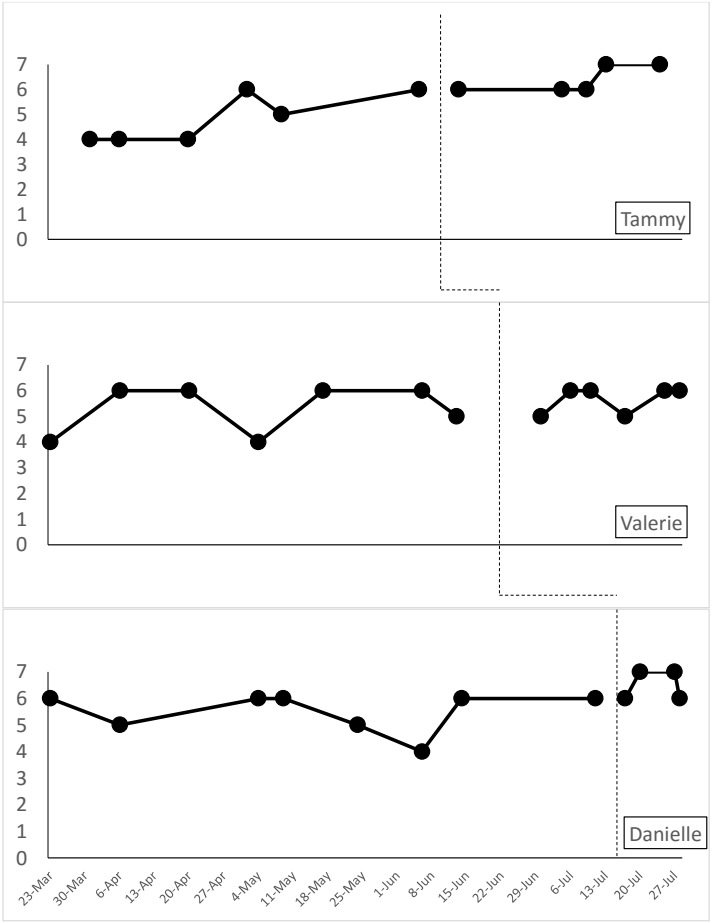

Figure 3*: Behavior Guidance* across Teacher 1, Teacher 2, and Teacher 3 during Tier I and Tier II.

Facilitation of Learning, Figure 4 depicts teacher's CLASS scores within the dimension of *Facilitation of Learning* across Tier I and Tier II. In Tier I Tammy's average CLASS score was 5 (range, 5-6); when Tier II intervention was applied Tammy's score increase to 6 (range, 5-6). This represents a 1-point increase. In Tier I Valerie's average CLASS score was 5 (range, 4 – 7); when Tier II intervention was applied Valerie's average CLASS score increased to 6

(range, 5 – 6). This represents a 1-point increase. In Tier I Danielle's average CLASS score was 5 (range, 5 – 6); when , Tier II intervention was applied Danielle's average CLASS score increased to 6 (range, 5 – 6). This represents a 1-point increase.

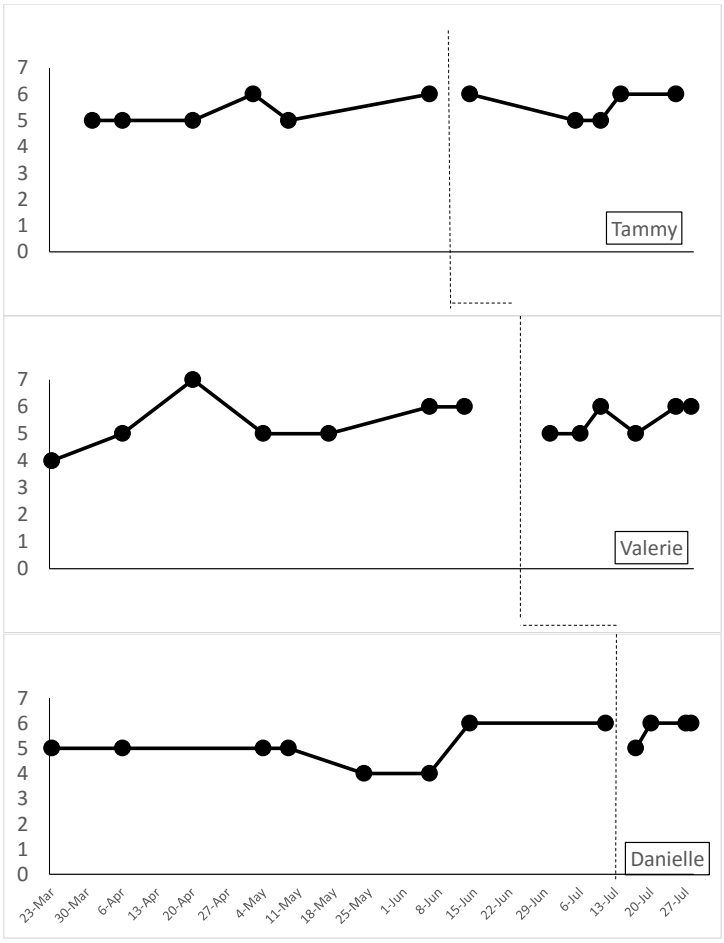

Figure 4*: Facilitation of Learning* across Teacher 1, Teacher 2, and Teacher 3 during Tier I and Tier II

Quality of Feedback. Figure 5 depicts teacher's CLASS scores within the dimension of *Quality of Feedback* across Tier I and Tier II. In Tier I Tammy's average CLASS score was 4 (range, 4 -5); when Tier II intervention was applied Tammy's average CLASS score increased to 5 (range, 4 – 6). This represents a 1-point increase. In Tier I Valerie's average CLASS score was 4 (range, 3 – 4); when Tier II intervention was applied Valerie's average CLASS score was 4 (range, 3 – 5). Valerie's average CLASS score between Tier I and Tier II remained constant. In Tier I Danielle's average CLASS score was 4 (range,, 3 – 6); when Tier II intervention was applied Danielle's average CLASS score was 4 (range, 3 – 5). Danielle's average CLASS score between Tier I and Tier II remained constant.

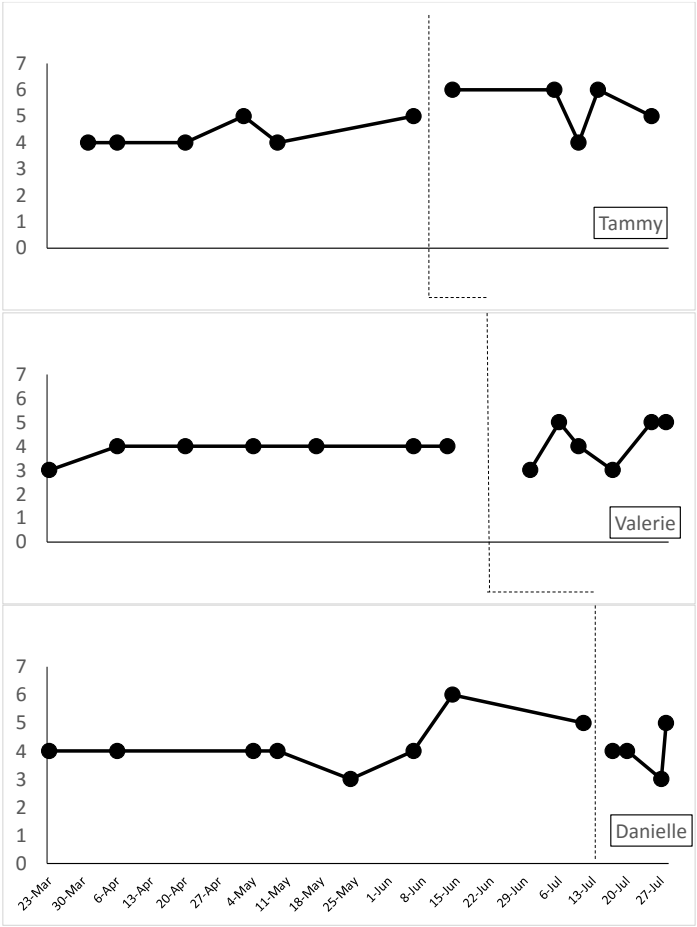

Figure 5: Quality of Feedback across Teacher 1, Teacher 2, and Teacher 3 during Tier I and Tier II.

Language Modeling. Figure 6 depicts teacher's CLASS scores within the dimension of *Language Modeling* across Tier I and Tier II. In Tier I Tammy's average CLASS score was 4 (range, 2 – 5); when Tier II intervention was applied Tammy's average CLASS score increased to 5 (range, 4 – 6). This represents a 1-point increase. In Tier I Valerie's average CLASS score was 4 (range, 3 – 5); when Tier II intervention was applied Valerie's average CLASS score was 5 (range, 3 – 6). This represents a 1-point increase. In Tier I Danielle's average CLASS score was 5 (range, 4 – 6); when Tier II intervention was applied Danielle's average CLASS score was 5 (range 5 – 5). Danielle's average CLASS score between Tier I and Tier II remained constant.

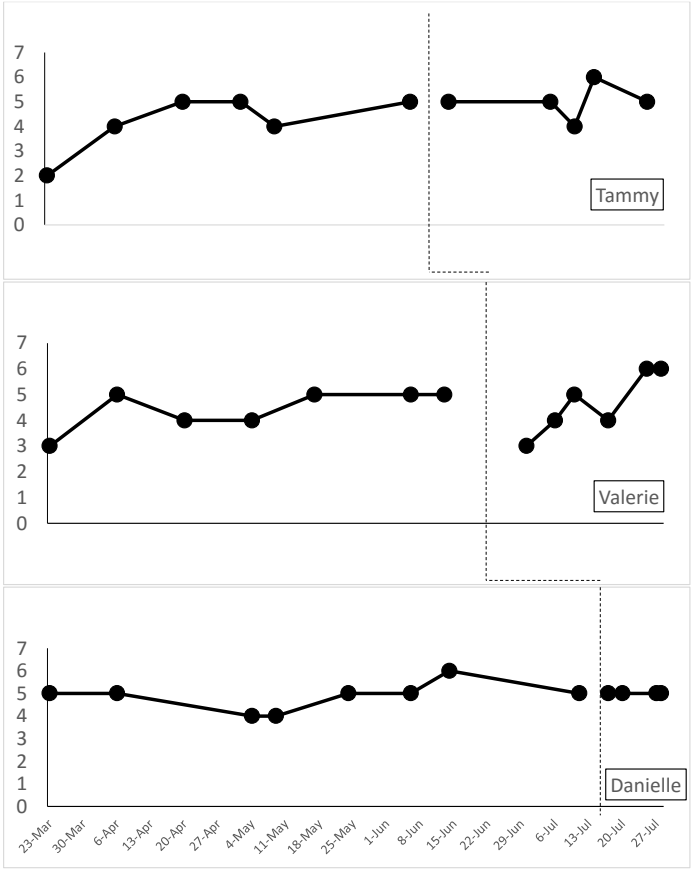

Figure 6: Language Modeling across Teacher 1, Teacher 2, and Teacher 3 during Tier I and Tier II

Chapter 5: Discussion

The purpose of the present study was to determine if teachers could reliably engage in video self-reflection to increase CLASS scores, improve pedagogical practice, and the quality of instruction provided to young children. Data were collected on both teachers' reliability with the researcher on the CLASS Toddler tool and on teacher performance across Tier I (self-reflection using the CLASS tool) and Tier II (video voice-over feedback from CLASS-reliable observer) interventions. Single subject methodology was used, as it allows for individual behaviors to be compared across interventions and is useful in applied settings with small populations (Kazdin, 2011). Previous research from Bayat (2010) determined that video-recording was a powerful tool to promote reflection and similarly the findings from this study support video self-reflection as a method for improving a teachers practice.

Video self-reflection was used in combination with the CLASS Toddler tool, as research has demonstrated that teachers are better able to be self-reflective when provided with a framework (Calandra, Gurvitch, & Lund, 2008). Findings from the present study echo the literature in the demonstration of the positive benefits of the use of video self-reflection with the CLASS tool, as they are both linked to growth in children and professional development support for teachers (Stuhlman, Hamre, Downer & Pianta, 201; Pianta, Mashburn, Downer, Hammer, & Justice, 2008). Using the CLASS instrument, theoretically and empirically, supports the framework to improve quality interactions between teacher and students in early childhood settings (Pianta, La Paro, & Hamre, 2005).

During Tier I and Tier II, the teachers were videoed at random, in 15-minute increments at least once during the week, unless circumstances prohibited. The videos consisted of the teachers interacting with the children during breakfast, whole group, centers, or music and

movement. The rationale for non-scheduled videotaping was to garner an accurate portrayal of the classroom as experienced by the child. Throughout the study the teachers made comments on the unscheduled nature of the observations. One teacher expressed her preference for non-scheduled visits stating that although she "… was not expecting to [be videotaped] today [and she was] glad … because [the researcher was] able to see what I do every day". Another teacher expressed a similar sentiment, remarking that, "It was not that bad. Sometimes I did roll my eyes when [the researcher] came in with the camera; but it was worth it. It was better not knowing when you were coming as I was not stressed all week knowing that I was going to be observed on a certain day.", while another stated, "…when we know we are going to be observed we worry all week about what we are going to do."

Research Question 1. Results at the end of Tier II indicated all the teachers were able to reliably assess their performance through video self- reflection using the CLASS framework and video voice-over coaching. Of the three teachers, one teacher was not reliable by the end of Tier I, but with video voice-over coaching in Tier II she was reliable with the researcher in her scoring of the CLASS Toddler tool. The theory of andragogy recognizes that learning is intertwined and adult development occurs across multiple dimensions with learning experiences (Knowles, Holton & Swanson, 2005). In this study, the types of teaching practices and the timing of when to use these practices were highlighted for teachers through the voice over videos, which is in alignment with adult learning theory. Access to video and voiceover feedback allowed the teachers to reflect on interactions, curriculum implementation, peer interactions and relationships in the videos while matching the experience to dimensions for scoring within the CLASS framework (Calandra, Gurvitch, & Lund, 2008), which lead to gains in reliable scoring of the tool.

Anecdotally, the present study appeared to provide positive professional growth and collaboration among the participating teachers. During the video recording for Tier I, the researcher overheard the three teachers talking with their instructional support director about the video recordings. One of the comments being expressed was the teachers' "enjoy[ment] in watching each other's [videos] and talking about the videos." Cherrington and Loveridge's (2014) research suggest that, "...video and collective dialogues are useful professional learning tools for teachers to examine and improves their teaching, structural, and relational challenges..." (p. 1). As is similar to the effects of My Teaching Partner (Pianta, Mashburn, Downer, Hamre, & Justice,2008) a component of CLASS which recognizes the need for support. My Teaching Partner is a costly coaching process with two main key components observation and opportunity. In the present study the teachers created a similar scenario among themselves by collaborating among themselves to view each other's video observations and talking with one another to enhance their practice and interactions with the CLASS tool .

In Tier II, the video voice-over feedback was intended to provide support for the recommended criteria fitting within the Andragogy framework (Knowles, 1984), as teachers were shown opportunities within their current practices to use the suggested skills. Although video self-reflection can be viewed as professional support for exploring one's own behaviors to develop possible changes, researchers caution that there may be dangers that associated with not having an external perspective as one could "fail to lead to an improvement in pedagogical practice and process quality" (Durand, Hopf, & Nunnenmacher, 2015, p. 38). The video voice-over feedback provided teachers with an external perspective. The teachers were instructed to watch the video voice-over and if they had any questions or comments they could email the researcher for further discussion; Tier II intervention lead to an increase in performance. The

teachers commented on the flexibility of being able to watch the videos at home, on their break, or whenever they had a free moment, and on the ability to watch the videos repeatedly. On teacher expressed, "I am learning more and want to continue to learn more. I see what I could have done here or there." She also mentioned, "I score myself a 3 because I see where I need to improve... [on] scaffolding and … more small group activities". These comments support the notion that the video voice-over feedback helped teachers to reflect on their practice and recognize where they needed to make improvements.

Research Question 2. Results indicated that by the end of Tier II all the teachers were able to *produce reflection* (Cherrington & Loveridge, 2014); meaning the teachers scores did not decrease as they were able to process, understand and view perspectives that were used to improve their teaching practices

Anecdotally, one teachers commented, "I have really enjoyed this [video process] because I know what CLASS is about and have enjoyed the [video voice-over] feedback.". This study echo's Lamkin's (2010) research, which found that, although uncomfortable, teachers viewed video self-reflection to be a valuable tool in spite of discomfort. The teachers in the present study commented they were uncomfortable being videoed and seeing how they looked on camera, but the benefits they received outweighed their discomfort.

Consistent with previous literature (Fukkink & Tavecchio, 2010), evidence from the present study validated that when teachers are given explicit instructions their skills increased. Additionally, teacher attitudes toward behavior change appeared to have been impacted. Comments during Tier II, indicated that teachers were more comfortable with the process, "These videos have helped me feel more comfortable when people come in to observe as I would always be nervous before." and were more receptive to making changes in their behavior based

on feedback from the researcher "...helps to see what we have done..." or "...I could have done that...I didn't think of that."

Limitations

The nature of the intervention could be viewed as a limitation. The threats to internal validity include availability and function of the technology equipment, which would prohibit videotaping some days. Furthermore, manpower resources necessary to consistently videotaping proved to be challenging and limited the ability to collect data at different times of the day; we were restricted to times where enough staff were available to assist. Time was also a limitation; teachers had difficulty finding the time to score the videotapes, as this type of professional development was new to them. It should be noted that there were five teachers identified at the beginning of the study who were selected based on their external CLASS scores. However, one for poor attendance and attrition due to the difficulty or discomfort of the research study.

Clinical Implications

Although this research study demonstrated that video self-reflection made a positive impact on teachers' reliable scoring and performance on the CLASS Toddler tool, additional research is warranted. Child care directors and teacher should consider the use of technology when planning professional development activities for teachers. Andragogy stipulates that there are six key principles that should be considered for the adult learner; the need to know, previous foundational knowledge, readiness, orientation to learning, motivation, and self-concept (Knowles, Holton, & Swanson, 2005). The experiences provided to teachers within the video self-reflection interventions in the present study satisfied the principles of andragogy. In times of budget and time constraints technological interventions that are in alignment with adult learning theory can provide a cost effective and less labor intensive mechanism for professional

development than face-to-face coaching (Levin, 2012). Recommendations for sustainability would include regular scheduling of videotaping, with time allotted for productive reflection Any number of technological tools (e.g., phone, ipad, etc.) could be used in the classroom to record a lesson, score themselves, email video and score to a reliable observer, followed by the observer emailing feedback without having to actually face-to-face coach. The timeframe used in the present study included 15-minutes for videoing, 15-minutes to view and take notes, followed by 15-minutes for scoring, which was not required consecutively. This models implementation could include scheduled collaborative planning time monthly for discussion and brainstorming with team members and instructional support members.

Future Research

A Tier III, face-to-face coaching, to examine if face-to-face coaching could impact the last toddler domain. Additional research could investigate if gains made through the present study maintained over time. Because the study ended in Tier II, video voice-over feedback, it is not clear if teachers' CLASS scores would have maintained once the video voice-over feedback was discontinued.

Conclusion

In this study, the teachers became increasingly aware of the CLASS Toddler tool criteria through scoring their own behaviors, which impacted their instructional practices with children and led to increase reliability in scoring and increased CLASS scores. The contribution of this study is the demonstration of the use of video self-reflection with teachers who had no formal training on the CLASS Toddler tool to increase their reliability in scoring the tool and increase in their scores.

This study adds value to body of literature on the use of self-reflection, as the framework helped the teachers better understand the CLASS Toddler tool criteria and be evaluative about their adherence to the criteria. This appeared to impact teachers' personal value of their practice, self-worth and feelings, as noted by one teacher who stated that she, "… really enjoyed [watching the videos] and learned a lot and would like to continue.". Furthermore, another teacher expressed her continual desire to learn even more after the completion of the study, "I am taking a [workshop on the] CLASS [tool] so I can learn more. This has prompted me to want to learn more."

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Appendix A
Institutional Review Board Approval

Application for Exemption from Institutional Oversight

Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
irb@lsu.edu | lsu.edu/irb

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/ projects using living humans as subjects, or samples, or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This form helps the PI determine if a project may be exempted, and is used to request an exemption.

– Applicant, Please fill out the application in its entirety and include the completed application as well as parts B-F, listed below, when submitting to the IRB. Once the application is completed, please submit the completed application to the IRB Office by e-mail (irb@lsu.edu) for review. If you would like to have your application reviewed by a member of the Human Subjects Screening Committee before submitting it to the IRB office, you can find the list of committee members at http://sites01.lsu.edu/wp/ored/human-subjects-screening-committee-members/.

– A Complete Application Includes All of the Following:
- **(A)** This completed form
- **(B)** A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1&2)
- **(C)** Copies of all instruments to be used.
  *If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
- **(D)** The consent form that you will use in the study (see part 3 for more information.)
- **(E)** Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB. Training link: (http://phrp.nihtraining.com/users/login.php)
- **(F)** Signed copy of the IRB Security of Data Agreement: (https://sites01.lsu.edu/wp/ored/files/2013/07/IRB-Security-of-Data.pdf)

1) Principal Investigator: Cynthia F. DiCarlo **Rank:** Professor

Dept: School of Education **Ph:** 578-7005 **E-mail:** cdicar2@lsu.edu

2) Co Investigator(s): please include department, rank, phone and e-mail for each
*If the Principal Investigator is a student, identify and name supervising professor in this space

Renee Casbergue, Professor, 578-4701, rcasberg@lsu.edu

3) Project Title: Impact of video self-reflection on teacher practice

4) Proposal? (yes or no) **If Yes, LSU Proposal Number**

Also, if YES, either ◯ **This application completely matches the scope of work in the grant**

OR ◯ **More IRB Applications will be filed later**

5) Subject pool (e.g. Psychology students) 40

*Indicate any **"vulnerable populations" to be used:** (children <18 the mentally impaired, pregnant women, the ages, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature Renee Casbergue **Date** 10-24-2016 (no per signatures)

**** I certify my responses are accurate and complete.** If the project scope or design is later changes, I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Screening Committee Action: ◯ Exempted ◯ Not Exempted Category/Paragraph

Signed Consent Waived?: ◯ Yes **or** ◯ No

Reviewer **Signature** **Date** 10-24-201

Continue on the next page

Part 1: Determination of "Research" and Potential For Risk

- This section determines whether the project meets the Department of Health and Human Services (HSS) definition of research involving human subjects, and if not, whether it nevertheless presents more than "minimal risk" to human subjects that makes IRB review prudent and necessary.

1. **Is this project involving human subjects a systematic investigation, including research, development, testing, or evaluation, designed to develop or contribute to generalizable knowledge?**
(Note some instructional development and service programs will include a "research" component that may fall within HHS' definition of human subjects research).

- (•) **YES**
- ( ) **NO**

2. **Does the project present physical, psychological, social or legal risks to the participants reasonably expected to exceed those risks normally experienced in daily life or in routine diagnostic physical or psychological examination or testing?** You must consider the consequences if individual data inadvertently become public.

- ( ) **YES - Stop.** This research cannot be exempted - **submit regular application for IRB review.**
- (•) **NO-Continue** to see if research can be exempted from IRB oversight

3. **Are any of your participants incarcerated?**

- ( ) **YES - Stop.** This research cannot be exempted--**submit regular application for IRB review.**
- (•) **NO-Continue** to see if research can be exempted from IRB oversight.

4. **Are you obtaining any health information <u>from a health care provider</u> that contains any of the identifiers listed below?**

A. Names
B. Address: street address, city, county, precinct, ZIP code, and their equivalent geocodes. <u>Exception for Zip codes:</u> the initial three digits of the ZIP Code may be used, if according to current publicly available data from the Bureau of the Census: (1) The geographic unit formed by combining all ZIP codes with the same three initial digits contains more than 20,000 people; and (2) the initial three digits of a ZIP code for all such geographic units containing 20,000 or fewer people is changed to '000'. (Note: The 17 currently restricted 3-digit ZIP codes to be replaced with '000' include: 036, 059, 063, 102, 203, 556, 692, 790, 921, 830, 831, 878, 879, 884, 890, and 893.)
C. Dates related to individuals
   i. Birth date
   ii. Admission date
   iii. Discharge date
   iv. Date of death
   v. And all ages over 89 and all elements of dates (including year) indicative of such ago. Such ages and elements may be aggregated into a single category of age 90 or older.
D. Telephone numbers;
E. Fax numbers;
F. Electronic mail addresses;
G. Social security numbers;
H. Medical record numbers; (including prescription numbers and clinical trial numbers)
I. Health plan beneficiary numbers;
J. Account numbers;
K. Certificate/license numbers;
L. Vehicle identifiers and serial numbers including license plate numbers;
M. Device identifiers and serial numbers;
N. Web Universal Resource Locators (URLs);
O. Internet Protocol (IP) address numbers;
P. Biometric identifiers, including finger and voice prints;
Q. Full face photographic images and any comparable images; and
R. Any other unique identifying number, characteristic, or code; except a code used alone or in combination with other information to identify an individual who is the subject of the information.

- ( ) **YES - Stop.** This research cannot be exempted--**submit regular application for IRB review.**
- ( ) **NO-** Continue to see if research can be exempted from IRB oversight.

Continue on the next page

Part 2: Exemption Criteria For Research Projects

Please select any and all categories that relate to your research. Research is exemptible when all research methods are one or more of the following five categories. Check statements that apply to your study:

● **1. In education setting, research to evaluate normal educational practices.**

○ **2. For research not involving vulnerable people (prisoner, fetus, pregnancy, children, or mentally impaired): observe public behavior (including participatory observation), or do interviews or surveys or educational tests:**

The research must also comply with one of the following:

◉ **a) The participants cannot be identified,** directly or statistically;

or that

● **b) The responses/observations could not harm participants if made public;**

or that

○ **c) Federal statute(s) completely protect all participants' confidentiality; Please cite the statute(s) if selecting this item**

○ **3. For research not involving vulnerable people (prisoner, fetus, pregnancy, children, or mentally impaired): observe public behavior (including participatory observation), or do interviews or surveys or educational tests:**

● **All respondents are elected, appointed, or candidates for public offices.**

○ **4. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.**

The research *must also comply with one of the following:*

● **a) Subjects cannot be identified** in the research data directly or statistically, and no one can trace back from research data to identify a participant;

or that

○ **b) The sources are publicly available**

○ **5. Research or demonstration service/care programs, e.g. health care delivery.**

○ **a) It is directly conducted or approved by the head of a US Govt. department or agency.**

and that

○ **b) It concerns only issues under usual administrative control** (48 Fed Reg 9268-9). e.g., regulations, eligibility, services, or delivery systems;

and that

○ **c) Its research/evaluation methods are also exempt from IRB review.**

○ **6. For research not involving vulnerable volunteers (see "2&3" above), do food research to evaluate quality, taste, or consumer acceptance.**

The research *must also comply with one of the following:*

○ **a) The food has no additives;**

or that

○ **b) The food is certified safe by the USDA, FDA, or EPA.**

PART 3: Consent Forms

The consent form must be written in non-technical language which can be understood by the subjects. It should be free of any exculpatory language through which the participant is made to waive, or appears to be made to waive any legal rights, including any release of the investigator, sponsor, institution or its agents from liability for negligence. (Note: the consent form is not a contract.)

* For example consent forms, please refer to our website, www.lsu.edu/irb

* The IRB prefers using signed informed consent; However, if that is impractical, an application to waive signed consent can be requested below. However, even if this waiver is requested, the **IRB must be provided with the consent script** that will present the information to human subjects regarding the study/research. All consent forms or scripts must include a statement that the study was approved or exempted by the IRB and provide IRB contact information to participants.

I am requesting waiver of signed Informed Consent because:

☐ **(a)** Having a participant sign the consent form would create the ***principal risk*** of participating in the study.

or that

☐ **(b)** The research presents ***no more than minimal risk*** of harm to subjects and involves no procedures for which having signed consent is normally required.

Now that your application is complete, please send it to the IRB office by e-mail for review. If you would like to have your application reviewed by a member of the Human Subjects Screening Committee before submitting it to the IRB office, you can find the list of committee members at

.

Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983

1. **Study Title:**
   Impact of Video Self-Reflection on Teacher Practice

2. **Performance Sites:**
   Early Childhood Education Laboratory Preschool

3. **Contacts:** M-F 8:30 a.m. – 3:00 p.m.
   Dr. Cynthia Dicarlo, Professor, (225) 578-7005
   Dr. Renee Casbergue, Professor, (225) 578-4701

4. **Purpose of the Study:**
   The purpose of the present study is to examine the impact of self-study of video observations of teaching on teaching practice.

5. **Subjects:**
   A. Inclusion Criteria
   Teachers, teaching assistants, graduate students, and student teachers at the Early Childhood Education Laboratory Preschool.

   B. Exclusion Criteria
   Substitutes or volunteers working on a temporary basis at the Early Childhood Education Laboratory Preschool

   C. Maximum number of subjects: 40 participants who work directly with young children.

6. **Study Procedures:**

   Teachers will be video recorded for 20-minute period within their classroom during the course of their typical classroom routines. The teacher will use the Classroom Assessment Scoring System (CLASS) to assess her teaching practice while watching the video

7. **Benefits:**
   As a result of this video self-assessment, teachers will become more familiar with the criteria on the CLASS tool and more likely to incorporate these practices into their teaching..

8. **Risks/Discomforts:**
   There are no known risks for participation in this study.

9. **Measures taken to reduce risk**
   There are no known risks for participation in this study.

10. **Right to Refuse:**
    Participation in the study is voluntary and subjects may change their mind and withdraw from the study at any time without penalty.

11. **Privacy:**
    This study is confidential. Results of the study may be publicly presented for educational purposes and no identifying information will be included in the presentation.

12. **Financial Information:**

    No incentives will be delivered.

13. **Withdrawal:**

    Subjects may withdraw at any time.

14. **Removal:**
    Individuals will be removed from the study at their request.

15. **Signatures:**

'The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Chairman, LSU Institutional Review Board, (225)578-8692. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me.'

ACTION ON EXEMPTION APPROVAL REQUEST

Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
irb@lsu.edu | lsu.edu/irb

TO: Cynthia DiCarlo
Education

FROM: Dennis Landin
Chair, Institutional Review Board

DATE: November 8, 2016

RE: **IRB#** E10188

TITLE: Impact of video self-reflection on teacher practice

New Protocol/Modification/Continuation: New Protocol

Review Date: 11/8/2016

Approved X **Disapproved**_____

Approval Date: 11/8/2016 **Approval Expiration Date:** 11/7/2019

Exemption Category/Paragraph: 1

Signed Consent Waived?: No

Re-review frequency: (three years unless otherwise stated)

LSU Proposal Number (if applicable):

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman _____

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –
Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc. Approvals will automatically be closed by the IRB on the expiration date unless the PI requests a continuation.**

* *All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/irb*

VITA

Michelle P. Grantham-Caston, a native of Baton Rouge, Louisiana, received her bachelor's degree at Louisiana State University, 2007. Thereafter, she taught school in Baton Rouge and wrote grants to provide more opportunities for the students she taught. As her interest for providing enriching and educational opportunities grew, she made the decision to enter graduate school in the College of Human Sciences and Education at Louisiana State University. She will receive her master's degree in December 2017 and plans to continue working on her doctorate upon graduation.